

CLAIMS

1. A battery changer that exchanges a battery to be loaded into a self-propelled traveling device, comprising:

a battery access part that moves forward and backward between a device body and a battery take-out port of a battery placing part of said self-propelled traveling device;

a battery grasping part disposed at a front end of said battery access part;

a feed mechanism part that is disposed on a front side of said battery access part and that moves perpendicularly in forward and backward directions of said battery access part; and

two or more battery storage parts movably disposed at the battery access part and the feed mechanism part.

2. The battery changer as set forth in claim 1, wherein said device body comprises a pull-in part that moves forward and backward in forward and backward directions of the device body and a pair of pull-in arms disposed on both sides of said pull-in part.

3. The battery changer as set forth in claim 2, wherein the pull-in arm comprises:

a pair of base arm parts that are rotatably attached to both side ends of said pull-in part and that turn horizontally;

a pair of arm supporting parts that are rotatably attached to a front end of said base arm part and that turn horizontally; and

a pair of engagement hooks disposed at a front end of said arm supporting part.

4. The battery changer as set forth in any one of claims 1 to 3, further comprising:

a body-side accessing rail, being laid back and forth on a rear side of said device body, said battery access part sliding on the body-side accessing rail; and

a storage-side accessing rail, being laid on an internal bottom of each of said battery storage parts, and being connected to said body-side accessing rail.

5. The battery changer as set forth in any one of claims 1 to 4, wherein said battery access part comprises a grasping motor, rotating said battery grasping part in a normal direction and in a reverse direction, and said battery grasping part comprises a push-out wall part that pushes said battery out and a pair of pull-in claw parts that are each shaped like a hook and that are protruded so as to face said push-out wall part.

6. The battery changer as set forth in any one of claims 1 to 5, further comprising:

a positioning support part that is disposed at a contact part, which is to come into contact with said self-propelled traveling device, of a front part of said device body and that is formed in a tapered manner on a side of said self-propelled traveling device; and

a positioning slide rail that is laid on a floor surface in rightward and leftward directions of said device body and that slides said device body in rightward and leftward directions.

7. The battery changer as set forth in any one of claims 1 to 6, wherein each of said battery storage parts has a charging terminal through which said battery is charged in a state in which said battery is stored.